

Memorandum of Understanding  
between the  
Japan Coal Energy Center (JCOAL)  
and the  
U.S. Department of Energy  
National Energy Technology Laboratory (NETL)

**I. Purpose**

The purpose of this Memorandum of Understanding (MOU) between the United States Department of Energy (DOE), National Energy Technology Laboratory (NETL) (hereinafter "NETL") and the Japan Coal Energy Center (hereinafter "JCOAL"), is to establish a arrangement for the exchange of information between NETL and JCOAL in the areas of chemical looping and oxy-fuel combustion.

**II. Funding**

NETL and JCOAL will each fund its own activities under this MOU.

**III. Specific Research and Development Projects**

NETL and JCOAL will discuss their independent investigations to further enable commercialization of fuel-flexible oxy-combustion systems and chemical looping processes.

**IV. Publication Rights**

Each party reserves the right to publish written works related to its own independent investigations discussed hereunder either separately or by co-authorship with the other party. In the event one party desires to publish information received from the other party, independently of the other, that party agrees to submit a draft of any such publication to the other party for a 30-day review period prior to release.

**V. Third Party Claims**

Each party shall be responsible for claims, losses, damages, and expenses which are proximately caused by the negligence or wrongful acts or omissions of that party or its employees, agents or representatives acting within the scope of their employment.

## VI. Communications

To provide for consistent and effective communications, the parties have designated points of contact listed below:

### NETL

#### Technical Contact:

Paul Turner  
Department of Energy  
1450 Queen Ave SW  
Albany, OR 97321  
Phone: 541.967.5863  
Email:  
paul.turner@netl.doe.gov

#### Administrative Contact:

Jessica Sosenko  
Department of Energy  
626 Cochrans Mill Road  
P.O. Box 10940  
Pittsburgh, PA 15236-0940  
Phone: 412.386.7417  
Email:  
jessica.sosenko@netl.doe.gov

### JCOAL

#### Technical Contact:

Keiichiro Hashimoto  
14-10,  
Mita 3-chome,  
Minato-ku, Tokyo 108-0073  
+81-3-6400-5198  
khashimoto@jcoal.or.jp

#### Administrative Contact:

Hironobu Oshima  
14-10,  
Mita 3-chome,  
Minato-ku, Tokyo 108-0073  
+81-3-6400-5198  
hoshima@jcoal.or.jp

The administrative points of contact shall coordinate all requests for administrative assistance under this MOU and shall serve as the administrative communication link between JCOAL and NETL. The technical contacts shall coordinate on matters relating to the exchange of information under this MOU.

## VII. Entire Agreement

This MOU embodies the entire agreement between JCOAL and NETL with regard to the information exchange described in this MOU and supersedes all other communications, either oral or written. The parties shall not be bound by, or be liable for any statement, representation, promise, inducement or understanding not set forth herein. No amendments or modifications shall be valid unless incorporated into this MOU.

**VIII. Authorities**

Work performed under this MOU is authorized by the Department of Energy Organization Act as Amended (Public Law 95-91).

**IX. Effective Date, Modification, And Termination**

This MOU is effective upon acceptance of both parties and shall remain in effect until May 30, 2016 unless terminated in accordance with the terms set forth herein. This MOU may be modified by mutual consent of the parties. Any modifications must be signed by the NETL ORD Director or designee and the JCOAL signatory listed below or designee.. This MOU may be terminated at any time by mutual consent of the parties. Either party may terminate this MOU unilaterally by providing 30 calendar days written notice.

**ACCEPTANCE:**

FOR JCOAL:

BY: \_\_\_\_\_

Shigeki Sakurai  
Senior Executive Director

DATE: \_\_\_\_\_

27/5/2011

FOR NETL:

BY: \_\_\_\_\_

Cynthia Powell  
Director, Office of Research and  
Development

DATE: \_\_\_\_\_

June 1, 2011